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(56) Documents Cited
GB 0470943 A **DE 003938352 A1**
US 2946511 A **US 2728604 A**

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INT CL⁷ **A47K, B65D**
Other: Online: **Epodoc, WPI, PAJ**

(54) Abstract Title
Packaging of rolls of sheet material with containers within or between rolls

(57) In packaging of one or more rolls 4 of material 5 wound about a core 6, and one or more containers, said containers are disposed either in the cores 6 of the rolls of material, or elsewhere within the package. The containers may be disposed in the spaces 7 formed between the rolls 4 in the package, and can be shorter, the same length as, or longer than the rolls, and can have snap-fit lids. Apparatus for manufacturing the package inserts the containers, which are delivered from a storage hopper, into the rolls, carried upon a conveyer belt, using a plunger, either before or after the rolls have been packaged. The apparatus may insert the containers into the cores of the rolls, or in the void spaces in the packaging. The rolls can be of any material, such as kitchen or toilet paper. The containers may be for promotional gifts or samples or information sheets, which can either be manually or automatically inserted.

FIG.2

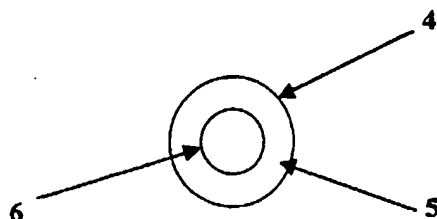
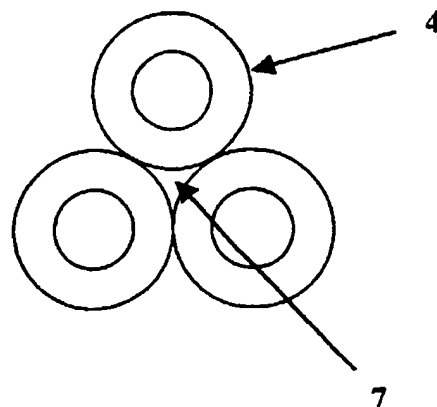


FIG.3



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FIG.1

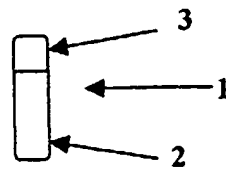


FIG.2

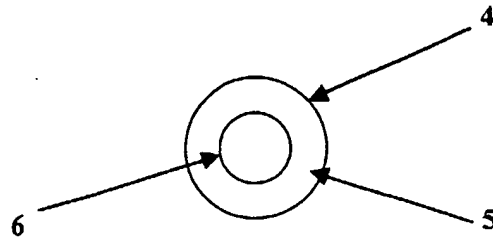


FIG.3

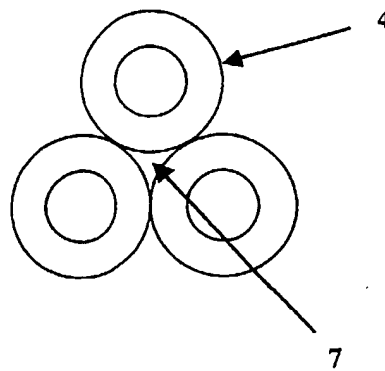


FIG.4

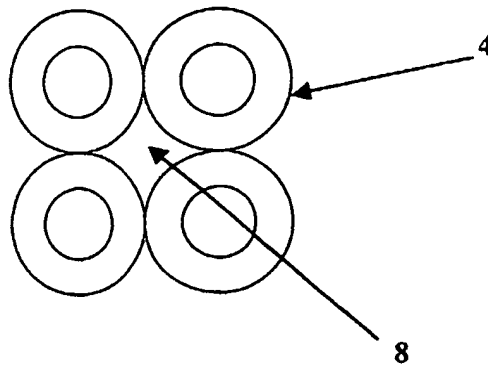
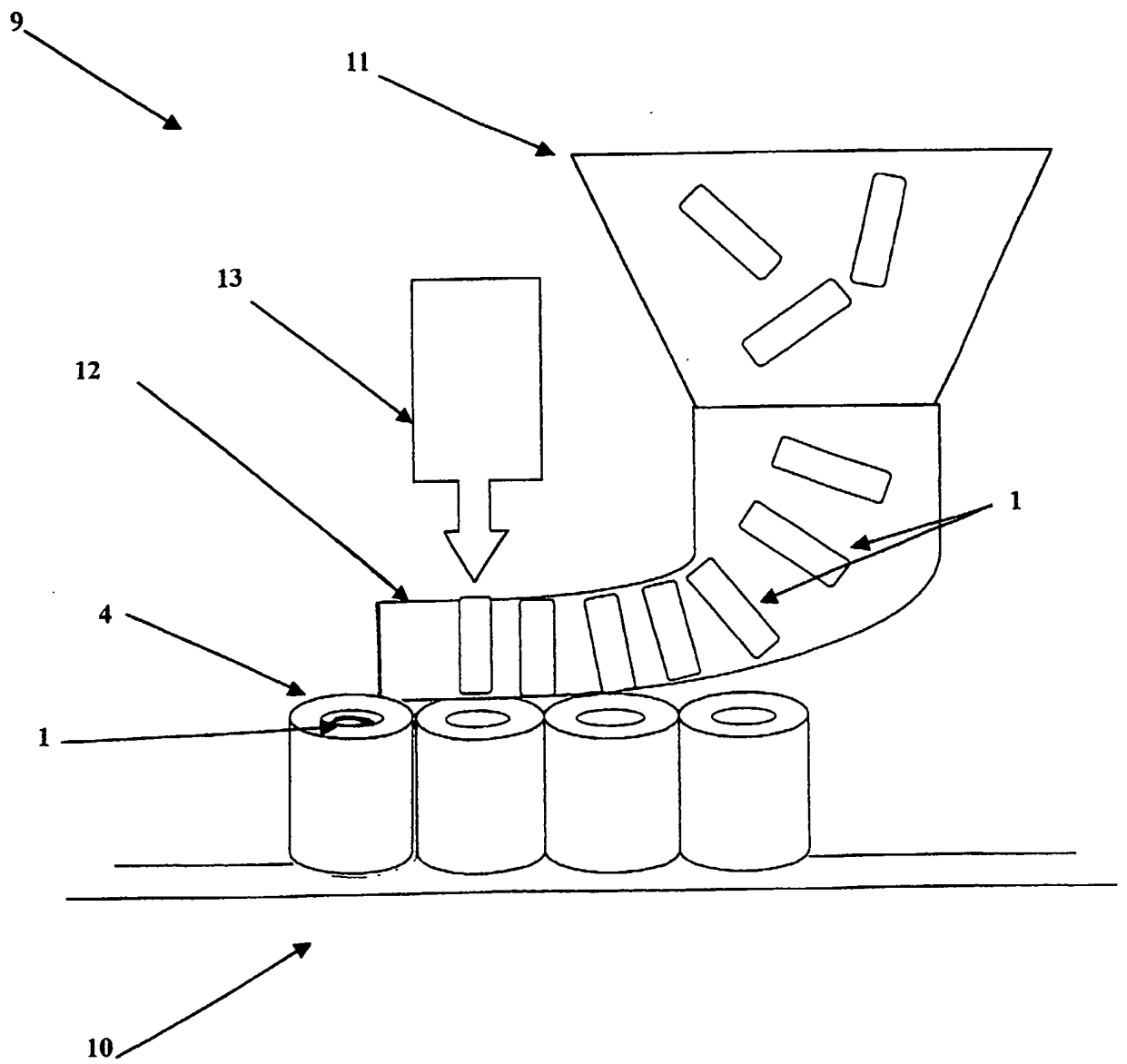


FIG.5



A PACKAGE

The invention relates to a package, in particular, a package comprising one or more rolls of sheet material wound around a hollow core.

Products such as toilet paper, kitchen paper and facsimile paper are usually sold in rolls, each roll consisting of a length of paper wound around a hollow cardboard core. The rolls are usually provided wrapped in a package in order to keep the rolls clean, and to provide a suitable surface for the printing of marketing information. In order to promote sales of the rolls, a manufacturer will occasionally attach a free gift to the outside of the package.

However, this free gift may readily become detached from the package, or may even be stolen. Moreover, because the free gift alters the outer dimensions of the package, it may cause difficulties in transport and storage of the package.

It is an object of this invention to seek to mitigate these disadvantages.

Accordingly, the present invention provides a package comprising one or more rolls of sheet material wound on a hollow core, and one or more containers, each container being housed in a void space in a roll or in the package.

The container can be used to house a free gift or any other item such as a sample or an information document. Housing the item in a void space of a roll or the package, rather than attaching it to the outside of the package as in existing packages, means that the item is contained more securely, and cannot readily be stolen. It also means that the outer dimensions of the package are unchanged, which aids transport and storage of the packages. In addition, because the item is in a container, different items may be readily inserted into the void spaces, irrespective of their shape, thereby simplifying the manufacturing process.

A container may be housed in the center of the hollow core of a roll.

The core of any particular type of roll, for example, a toilet roll, will usually be of a standard size, and so one size of container should be suitable for all such rolls, thereby simplifying the manufacturing process. Moreover, if a container is housed in the center of the hollow core of a roll, the roll cannot be fitted to a standard roll holder unless the container is first removed from the core, with the result that the container is brought to the user's attention.

Alternatively or in addition, where a package comprises a plurality of rolls, a container may be housed in between the rolls. The size of the container which can be so housed will depend on how the rolls are packed together.

The containers may be of any suitable size, the only limitation being that they must be smaller than the void space into which they are to be inserted.

The length of one or more of the containers may be less than the length of a roll. Such containers may be used in any type of package.

The length of one or more of the containers may be greater than the length of a roll. Such containers may be used in a package comprising a plurality of rolls stacked one on top of each other.

The containers may be of any suitable shape. They do not have to be of the same shape as the void space into which they are to be inserted. For example, they can be of circular cross-section or of square cross-section.

The containers may be made of any suitable material. For example, they may be made of a rigid material or they may be made of a flexible material.

The containers may be open ended, sealed at both ends, or sealed at one end.

For a better understanding of the invention, a specific embodiment of a package according to the invention and an apparatus for manufacturing such a package will now be described, by way of example, with reference to the accompanying drawings, of which:

Fig. 1 shows a perspective view of a container;

Fig. 2 shows a plan view of a single toilet roll;

Fig. 3 shows a plan view of three toilet rolls;

Fig. 4 shows a plan view of four toilet rolls; and

Fig. 5 shows an apparatus for inserting the containers during the manufacturing of packages according to the invention.

Fig. 1 shows a container 1. The container 1 is made of plastics material and comprises a hollow tube 2 sealed at one end, and closed at the other end by a snap-fit lid 3. The container 1 is 10cm long, and has a diameter of 3.5cm. A free gift or other item may be placed inside the container 1.

Fig. 2 shows a toilet roll 4, which comprises a sheet of toilet paper 5 wound around a cylindrical hollow cardboard core 6. The core 6 is 11cm long, and has a diameter of 3.8cm. A container 1 may be placed inside the core 6, and the roll 4 may then be wrapped up to form a package according to the invention.

Fig. 3 shows three toilet rolls 4, assembled together in triangular form. A container 1 may be placed inside one or more of the cores 6 of the rolls 4. Alternatively or in addition, a smaller container may be placed in the space 7 in between the three rolls 4. The three rolls 4 may then be wrapped up to form a package according to the invention.

Fig. 4 shows four toilet rolls, assembled together in rectangular form. A container 1 may be placed inside one or more of the cores 6 of the rolls 4. Alternatively or in addition, a container may be placed in the space 8 between the four rolls 4. The space 8 is large enough that the container may be the same as the containers 1 inserted in the cores 6.

Fig. 5 shows an apparatus 9 for inserting the containers 1 during the manufacturing of packages according to the invention. The apparatus 9 comprises a conveyor belt 10 for conveying toilet rolls 4, a storage hopper 11 for storing containers 1 which have already been filled with free gifts, a conveyor belt 12 for conveying filled containers 1 from the hopper 11 to the toilet rolls 4, and a plunger 13 for transferring a filled container 1 from the conveyor belt 12 into the core 6 of a toilet roll 4. A computer (not shown) co-ordinates the functioning of the various parts of the apparatus 9 so that each successive container 1 on the conveyor belt 12 arrives at the plunger 13 at the correct time for the plunger 13 to transfer that container 1 into the core 6 of the next toilet roll 3 on the conveyor belt 10.

The containers 1 in the hopper 11 may be filled by hand, or by mechanical means.

Insertion of the containers 1 into the toilet rolls 4 will usually be done after the toilet rolls 4 have been wrapped, in which case the plunger 13 must be such as to cause the container 1 to pierce the wrapping of the packaging. The package can then be re-sealed once insertion of the container 1 has taken place. Insertion of the containers 1 may also be done before the toilet rolls 4 have been wrapped.

CLAIMS

1. A package comprising one or more rolls of sheet material wound on a hollow core, and one or more containers, each container being housed in a void space in a roll or in the package.
2. A package according to claim 1, wherein a container is housed in the center of the hollow core of a roll.
3. A package according to claim 1 or claim 2, wherein the package comprises a plurality of rolls, and a container is housed in between the rolls.
4. A package according to any preceding claim, wherein the length of one or more of the containers is less than the length of a roll.
5. A package according to any of claims 1 to 3, wherein the length of one or more of the containers is greater than the length of a roll.
6. A package substantially as described herein with reference to the accompanying drawings.
7. An apparatus for manufacturing a package comprising one or more rolls of sheet material wound on a hollow core, the apparatus comprising means for inserting a container into a void space in a roll or in the package.
8. An apparatus substantially as described herein with reference to the accompanying drawings.



INVESTOR IN PEOPLE

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Claims searched: 1-8

6 Examiner: Dave Woolf
Date of search: 20 January 2003

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1, 2, 7	DE 3938352 A1 (PEER) abstract, figures 1 and 2, column 3 lines 14-29
X	1, 2, 4	US 2728604 (GARFIELD) column 1 lines 36-39, column 2 line 70 - column 3 line 3 and figure 2
X	1, 2, 4	GB 470943 (FLEISCHER) page 1 lines 34-42
X	1, 2, 4	US 2946511 (BARTUS) column 1 lines 62-65

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^v:

B8C

Worldwide search of patent documents classified in the following areas of the IPC⁷:

A47K; B65D

The following online and other databases have been used in the preparation of this search report:

Epodoc, WPI, PAJ